GLOBAL WEEK 2019

THE PROMISES AND CHALLENGES OF
ARTIFICIAL INTELLIGENCE

Castilleja

MASTER SCHEDULE

MON 07	TUE 08	WED 09	THU 10
8:00–8:10am Advisory	8:00–8:25am Advisory	9:00–9:10am Advisory	8:00–8:10am Advisory
8:15–9:15am KEYNOTE JEFF DEAN *Chapel Theater*	8:30–9:30am KEYNOTE TESS POSNER *Chapel Theater*	9:15–10:15am KEYNOTE JOY BUOLAMWINI *Chapel Theater*	8:15–11:15am Grade-level Work
9:15–9:30am Break	9:30–10:00am Break	10:15–10:30am Break	11:15–11:30am Break
9:30am–1:50pm Grade-level Work and Lunch	10:00am–2:20pm Grade-level Work and Lunch	10:30am–2:00pm Grade-level Work and Lunch	11:30am–12:00pm SHOWCASE *Chapel Theater*
			Lunch
			1:00–1:45pm KEYNOTE DJ PATIL *Chapel Theater*
1:50–1:55pm Break	2:20–2:30pm Break	2:00–2:15pm Break	1:45–2:00pm Break
1:55–3:15pm DESIGN CHALLENGE CARISSA CARTER *Upper Gym*	2:30–3:15pm DISCUSSION ETHICS PANEL *Chapel Theater*	2:15–3:15pm DISCUSSION ALUMN(AI) PANEL *Chapel Theater*	2:00–3:15pm CLOSING BABA BRINKMAN *Chapel Theater*
	5:00–7:00pm GALLERY OPENING AND RECEPTION *Anita Seipp Gallery*		
	7:00–8:30pm Community Evening KEYNOTE VAUGHAN SMITH *Choral Room*		

THE PROMISES AND CHALLENGES OF ARTIFICIAL INTELLIGENCE

For years, ideas about how artificial intelligence might shape our daily lives were inspired by the imaginations of science fiction writers and movie makers. Now, science is quickly pushing us closer and closer to the realities that seemed only relevant to robots and outer space a few generations ago. This year's Global Week, "The Promises and Challenges of Artificial Intelligence," invites us to push the boundaries, investigate the promises, and understand the limits of artificial intelligence today and in the future.

Overarching goals for Global Week 2019:

- develop a foundational understanding of the role of data and algorithms in artificial intelligence
- explore how artificial intelligence complements our daily lives
- understand in which areas artificial intelligence thrives or is limited
- develop the capacity to examine artificial intelligence from different perspectives and consider the circumstances under which it might make sense to deviate from an algorithm's decision

This workbook serves as a resource to document the week-long experiences that will inspire us to lead with purpose in years to come. This workbook will not look the same by the end of the week! We'll use it to document our thinking and learning as a community and create our own "artifact" to share what we believe are the challenges and opportunities of AI.

WHAT DO YOU THINK ARE THE PROMISES AND CHALLENGES OF ARTIFICIAL INTELLIGENCE?

THINGS I'M CURIOUS ABOUT...

John McCarthy, a Stanford professor, first coined the term "artificial intelligence" in 1955.

THE ART IN ARTIFICIAL INTELLIGENCE

FEATURING INTERACTIVE ART PIECES BY YOTAM MANN, PURIN PHANICHPHANT, AND ANASTASIA VICTOR

Opening Reception with Artists: Tuesday, January 8, 5:00-7:00pm
Exhibition on view: Anita Seipp Gallery, Monday, January 7 – Friday, January 18

Recently, news about experimental Facebook machine learning research has been circulating with increasingly alarming, Skynet-esque headlines. "Facebook engineers panic, pull plug on AI after bots develop their own language," one site wrote. "Facebook shuts down AI after it invents its own creepy language," another added. While the massively over-exaggerated headlines were debunked as fake news (literally, "artificial intelligence"), the damage has already been done–many of us will never completely trust AI in our lifetimes.

While remaining neutral on the debate between optimists and pessimists, the exhibit examines other tangible forms of AI as perceived by artists and creatives working with technology. Part educational and part thought-provoking, the show aims to attract and spark dialogue among thought-leaders in the field, as well as aspiring next-generation technologists.

SKETCH OUT YOUR UNDERSTANDING OF AI HERE

MONDAY, JANUARY 07

6th Grade	7th Grade	8th Grade
8:00–8:10am Advisory	8:00–8:10am Advisory	8:00–8:10am Advisory
8:15–9:15am KEYNOTE JEFF DEAN *Chapel Theater*	8:15–9:15am KEYNOTE JEFF DEAN *Chapel Theater*	8:15–9:15am KEYNOTE JEFF DEAN *Chapel Theater*
9:15–9:30am Break	9:15–9:30am Break	9:15–9:30am Break
9:30–11:15am Grade-level Work *MS Lower Level, Rooms 20, 27 & Lower Gym*	9:30am–12:15pm Grade-level Work *Rooms 205, 206, 207, 208 & Black Box Theater*	9:30–11:25am Grade-level Work *Rooms 8, 9, 10, 11, 12 & 13*
11:15am–12:05pm Lunch	12:15–12:50pm Lunch	11:25am–12:15pm Lunch
12:05–1:50pm Grade-level Work *MS Lower Level, Rooms 20, 27 & Lower Gym*	12:50–1:50pm Grade-level Work *Rooms 205, 206, 207, 208 & Black Box Theater*	12:15–1:50pm Grade-level Work *MS Lobby, Rooms 8, 9, 10, 11, 12 & 13*
1:50–1:55pm Break	1:50–1:55pm Break	1:50–1:55pm Break
1:55–3:15pm DESIGN CHALLENGE CARISSA CARTER *Upper Gym*	1:55–3:15pm DESIGN CHALLENGE CARISSA CARTER *Upper Gym*	1:55–3:15pm DESIGN CHALLENGE CARISSA CARTER *Upper Gym*
No Evening Event		

MONDAY, JANUARY 07

9th Grade	10th Grade	12th Grade
8:00–8:10am Advisory	8:00–8:10am Advisory	8:00–8:10am Advisory
8:15–9:15am KEYNOTE JEFF DEAN *Chapel Theater*	8:15–9:15am KEYNOTE JEFF DEAN *Chapel Theater*	8:15–9:15am KEYNOTE JEFF DEAN *Chapel Theater*
9:15–9:30am Break	9:15–9:30am Break	9:15–9:30am Break
9:30–10:00am Grade-level Work *Choral Room* - - - - - - - - - - 10:00am–12:00pm *Rooms 22, 23, 24 & 25*	9:30–10:30am Grade-level Work *Rooms 202, 203, 209 & 210*	9:30am–12:00pm Grade-level Work *Bourn Lab, ACE Center Partner Room, Rooms 306, 307, 26A & 26B*
12:00–12:45pm Lunch	10:30am–1:20pm Grade-level Work *Off-Campus Interviews Bagged Lunches or Lunch on Campus* - - - - - - - - - - 1:20–1:50pm *Rooms 202, 203, 209 & 210*	12:00–12:30pm Lunch
12:45–1:50pm Grade-level Work *Rooms 22, 23, 24 & 25*		12:30–1:50pm Grade-level Work *Bourn Lab, ACE Center Partner Room, Rooms 306, 307, 26A & 26B*
1:50–1:55pm Break	1:50–1:55pm Break	1:50–1:55pm Break
1:55–3:15pm DESIGN CHALLENGE CARISSA CARTER *Upper Gym*	1:55–3:15pm DESIGN CHALLENGE CARISSA CARTER *Upper Gym*	1:55–3:15pm DESIGN CHALLENGE CARISSA CARTER *Upper Gym*
No Evening Event		

TUESDAY, JANUARY 08

6th Grade	7th Grade	8th Grade
8:00–8:25am Advisory	8:00–8:25am Advisory	8:00–8:25am Advisory
8:30–9:30am KEYNOTE TESS POSNER *Chapel Theater*	8:30–9:30am KEYNOTE TESS POSNER *Chapel Theater*	8:30–9:30am KEYNOTE TESS POSNER *Chapel Theater*
9:30–10:00am Break	9:30–10:00am Break	9:30–10:00am Break
10:00–11:10am Grade-level Work *MS Lower Level, Rooms 20, 27 & Lower Gym*	10:00am–12:00pm Grade-level Work *Rooms 205, 206, 207, 208 & Black Box Theater*	10:00–11:25am Grade-level Work *Rooms 8, 9, 10, 11, 12 & 13*
11:10am–11:55pm Lunch	12:00–12:30pm Lunch	11:25am–12:15pm Lunch
11:55–2:20pm Grade-level Work *MS Lower Level, Rooms 20, 27 & Lower Gym*	12:30–2:20pm Grade-level Work *Rooms 205, 206, 207, 208 & Black Box Theater*	12:15–2:20pm Grade-level Work *MS Lobby, Rooms 8, 9, 10, 11, 12 & 13*
2:20–2:30pm Break	2:20–2:30pm Break	2:20–2:30pm Break
2:30–3:15pm DISCUSSION ETHICS PANEL *Chapel Theater*	2:30–3:15pm DISCUSSION ETHICS PANEL *Chapel Theater*	2:30–3:15pm DISCUSSION ETHICS PANEL *Chapel Theater*
5:00–7:00pm GALLERY OPENING AND RECEPTION *Anita Seipp Gallery*		
7:00–8:30pm Community Evening KEYNOTE VAUGHAN SMITH *Chapel Theater*		

TUESDAY, JANUARY 08

9th Grade	10th Grade	12th Grade
8:00–8:25am Advisory	8:00–8:25am Advisory	8:00–8:25am Advisory
8:30–9:30am KEYNOTE TESS POSNER *Chapel Theater*	8:30–9:30am KEYNOTE TESS POSNER *Chapel Theater*	8:30–9:30am KEYNOTE TESS POSNER *Chapel Theater*
9:30–10:00am Break	9:30–10:00am Break	9:30–10:00am Break
10:00–11:00am Grade-level Work *Choral Room*	10:00am–2:20pm Off-Campus All-Class Volunteer Opportunity (Pack bagged lunches at Break)	10:00am–12:00pm Grade-level Work *Bourn Lab, ACE Center Partner Room, Rooms 306, 307, 26A & 26B*
11:00am–12:00pm *Rooms 22, 23, 24 & 25*		
12:00–12:45pm Lunch		12:00–12:30pm Lunch
12:45–2:20pm Grade-level Work *Rooms 22, 23, 24 & 25*		12:30–2:20pm Grade-level Work *Bourn Lab, ACE Center Partner Room, Rooms 306, 307, 26A & 26B*
2:20–2:30pm Break	2:20–2:30pm Break	2:20–2:30pm Break
2:30–3:15pm DISCUSSION ETHICS PANEL *Chapel Theater*	2:30–3:15pm DISCUSSION ETHICS PANEL *Chapel Theater*	2:30–3:15pm DISCUSSION ETHICS PANEL *Chapel Theater*

5:00–7:00pm
GALLERY OPENING AND RECEPTION
Anita Seipp Gallery

7:00–8:30pm
Community Evening
KEYNOTE
VAUGHAN SMITH
Chapel Theater

WEDNESDAY, JANUARY 09

6th Grade	7th Grade	8th Grade
9:00–9:10am Advisory	9:00–9:10am Advisory	9:00–9:10am Advisory
9:15–10:15am KEYNOTE JOY BUOLAMWINI *Chapel Theater*	9:15–10:15am KEYNOTE JOY BUOLAMWINI *Chapel Theater*	9:15–10:15am KEYNOTE JOY BUOLAMWINI *Chapel Theater*
10:15–10:30am Break	10:15–10:30am Break	10:15–10:30am Break
10:30–11:30am Grade-level Work *MS Lower Level, Rooms 20, 27 & Lower Gym*	10:30am–12:00pm Grade-level Work *Rooms 205, 206, 207, 208 & Black Box Theater*	10:30–11:40am Grade-level Work *Rooms 8, 9, 10, 11, 12 & 13*
11:30am–12:15pm Lunch	12:00–12:40pm Lunch	11:40am–12:30pm Lunch
12:15–2:00pm Grade-level Work *MS Lower Level, Rooms 20, 27 & Lower Gym*	12:40–2:00pm Grade-level Work *Rooms 205, 206, 207, 208 & Black Box Theater*	12:30–2:00pm Grade-level Work *MS Lobby, Rooms 8, 9, 10, 11, 12 & 13*
2:00–2:15pm Break	2:00–2:15pm Break	2:00–2:15pm Break
2:15–3:15pm DISCUSSION ALUMN(AI) PANEL *Chapel Theater*	2:15–3:15pm DISCUSSION ALUMN(AI) PANEL *Chapel Theater*	2:15–3:15pm DISCUSSION ALUMN(AI) PANEL *Chapel Theater*
No Evening Event		

WEDNESDAY, JANUARY 09

9th Grade	10th Grade	12th Grade
9:00–9:10am Advisory	9:00–9:10am Advisory	9:00–9:10am Advisory
9:15–10:15am KEYNOTE JOY BUOLAMWINI *Chapel Theater*	9:15–10:15am KEYNOTE JOY BUOLAMWINI *Chapel Theater*	9:15–10:15am KEYNOTE JOY BUOLAMWINI *Chapel Theater*
10:15–10:30am Break	10:15–10:30am Break	10:15–10:30am Break
10:30am–12:00pm Grade-level Work *Rooms 22, 23, 24 & 25*	10:30am–12:10pm Grade-level Work *Rooms 202, 203, 209 & 210*	10:30am–12:00pm Grade-level Work *Bourn Lab, ACE Center Partner Room, Rooms 306, 307, 26A & 26B*
12:00–12:45pm Lunch	12:10–12:50pm Lunch	12:00–12:30pm Lunch
12:45–2:00pm Grade-level Work *Rooms 22, 23, 24 & 25*	12:50–2:00pm Grade-level Work *Rooms 202, 203, 209 & 210*	12:30–2:00pm Grade-level Work *Bourn Lab, ACE Center Partner Room, Rooms 306, 307, 26A & 26B*
2:00–2:15pm Break	2:00–2:15pm Break	2:00–2:15pm Break
2:15–3:15pm DISCUSSION ALUMN(AI) PANEL *Chapel Theater*	2:15–3:15pm DISCUSSION ALUMN(AI) PANEL *Chapel Theater*	2:15–3:15pm DISCUSSION ALUMN(AI) PANEL *Chapel Theater*
No Evening Event		

THURSDAY, JANUARY 10

6th Grade	7th Grade	8th Grade
8:00–8:10am Advisory	8:00–8:10am Advisory	8:00–8:10am Advisory
8:15–11:15am Grade-level Work *MS Lower Level, Rooms 20, 27 & Lower Gym*	8:15–11:15am Grade-level Work *Rooms 205, 206, 207, 208 & Black Box Theater*	8:15–11:15am Grade-level Work *Rooms 8, 9, 10, 11, 12 & 13*
11:15–11:30am Break	11:15–11:30am Break	11:15–11:30am Break
11:30am–12:00pm SHOWCASE *Chapel Theater*	11:30am–12:00pm SHOWCASE *Chapel Theater*	11:30am–12:00pm SHOWCASE *Chapel Theater*
12:00–1:00pm Lunch	12:00–1:00pm Lunch	12:00–1:00pm Lunch
1:00–1:45pm KEYNOTE DJ PATIL *Chapel Theater*	1:00–1:45pm KEYNOTE DJ PATIL *Chapel Theater*	1:00–1:45pm KEYNOTE DJ PATIL *Chapel Theater*
1:45–2:00pm Break	1:45–2:00pm Break	1:45–2:00pm Break
2:00–3:15pm CLOSING BABA BRINKMAN *Chapel Theater*	2:00–3:15pm CLOSING BABA BRINKMAN *Chapel Theater*	2:00–3:15pm CLOSING BABA BRINKMAN *Chapel Theater*
No Evening Event		

THURSDAY, JANUARY 10

9th Grade	10th Grade	12th Grade
8:00–8:10am Advisory	8:00–8:10am Advisory	8:00–8:10am Advisory
8:15–11:15am Grade-level Work *Choral Room*	8:15–11:15am Grade-level Work *Rooms 202, 203, 209 & 210*	8:15–11:15am Grade-level Work *Bourn Lab, ACE Center Partner Room, Rooms 306, 307, 26A & 26B*
11:15–11:30am Break	11:15–11:30am Break	11:15–11:30am Break
11:30am–12:00pm SHOWCASE *Chapel Theater*	11:30am–12:00pm SHOWCASE *Chapel Theater*	11:30am–12:00pm SHOWCASE *Chapel Theater*
12:00–1:00pm Lunch	12:00–1:00pm Lunch	12:00–1:00pm Lunch
1:00–1:45pm KEYNOTE DJ PATIL *Chapel Theater*	1:00–1:45pm KEYNOTE DJ PATIL *Chapel Theater*	1:00–1:45pm KEYNOTE DJ PATIL *Chapel Theater*
1:45–2:00pm Break	1:45–2:00pm Break	1:45–2:00pm Break
2:00–3:15pm CLOSING BABA BRINKMAN *Chapel Theater*	2:00–3:15pm CLOSING BABA BRINKMAN *Chapel Theater*	2:00–3:15pm CLOSING BABA BRINKMAN *Chapel Theater*
No Evening Event		

As you learn more about AI and its potential applications, what are you most excited about? What kinds of things are you worried about, and how can we ensure that the use of AI is on-balance beneficial for everyone?

Jeff Dean

What algorithm could I use for this?

Carissa Carter

DEEP LEARNING TO SOLVE CHALLENGING PROBLEMS

MONDAY, 8:15–9:15AM

JEFF DEAN
GOOGLE SENIOR FELLOW AND SVP AT GOOGLE RESEARCH AND MACHINE INTELLIGENCE

Connect: research.google.com/people/jeff
Twitter: @JeffDean

I lead Google's Research and Machine Intelligence teams. In my role, I set the technical direction and contribute to some of our individual research projects. I also try to shape the general direction of our organization to take on ambitious problems whose solutions will have significant impact in the world.

When you were in middle school, what did you "want to be" when you grew up?
Someone who worked with computers, writing software (after my architect, sailboat designer, and violinist phases).

What book or movie can you read or watch over and over?
The Count of Monte Cristo, by Alexandre Dumas

#BragTag
#CuriousityDrivenScientistAndEngineerWhoEnjoysBuildingSoftwareThatHasImpactInTheWorld

Past Accomplishments:
I've built software systems that are used by many people, including the open-source machine learning software called TensorFlow. TensorFlow is used internally at Google for important parts of many Google products as well as externally by other companies and organizations for all kinds of purposes (e.g., fitness sensors for cows, helping farmers in Tanzania diagnose diseased cassava plants, performing diagnostic tasks for radiology or dermatology, etc.).

What keeps you up at night when you think about AI?
The issues of fairness and bias. Often, when we train machine learning systems, we train them on data that reflect "the world as it is," not "the world as we would like it to be." We need to make sure that our use of AI does not perpetuate behaviors or decisions that we don't want.

A DESIGN CHALLENGE WITH MACHINE LEARNING

MONDAY, 1:55–3:15PM

CARISSA CARTER
DIRECTOR OF TEACHING AND LEARNING AT THE STANFORD D.SCHOOL

Connect: www.snowflyzone.com
Twitter: @snowflyzone

I am the Director of Teaching and Learning at the Stanford d.school. In this role, I guide the development of the d.school's pedagogy, lead its instructors, and shape its class offerings. I teach courses on the intersection of data and design, design and blockchain, design for climate change, and maps and the visual sorting of information.

When you were in middle school, what did you "want to be" when you grew up?
Astronaut

What book or movie can you read or watch over and over?
The Power of One by Bryce Courtenay

#BragTag
#radaccess I'm working hard to provide radical access to emerging tech like AI to all people, especially those who are underrepresented in tech.

Past Accomplishments:
I was one of the co-leaders of Stanford 2025, a multi-year d.school project that envisioned the future of higher education. My first career was in the geosciences. As a geomorphologist, I studied subglacial deposits, slot canyon incision, and bedforms and cross-bedding.

What do you think is the most promising idea or application of AI currently or in the future?
I think we'll see the most impact immediately in the healthcare space, specifically in diagnostics.

What keeps you up at night when you think about AI?
The tension between usable AI, mass surveillance, and privacy. AI can improve our lives, but it needs to be in our lives to work well. When that happens, our privacy goes away, and we can be tracked. What if that info gets in the wrong hands?

QUESTIONS TO CONSIDER

What are some ways that AI can help my community?

Tess Posner

How do we make sure that technologies help empower people to lead better lives, while ensuring that they do not create or magnify unfairness and injustice?

Matt Cagle

What are you curious about? (It's curiosity and a zest for learning that leads to discoveries and joy!)

Margot Gerritsen

Mark Zuckerberg of Facebook says AI will make our lives better. Elon Musk of Tesla says AI presents a fundamental risk to human existence. Who's right?

Natasha Singer

ETHICS AND INCLUSION IN AI

TUESDAY, 8:30–9:30AM

TESS POSNER
CEO AT AI4ALL

Connect: www.ai-4-all.org
Twitter: @tessposner

I lead the AI4ALL organization, which is working to make artificial intelligence more diverse and inclusive and to ensure that AI is developed responsibly.

When you were in middle school, what did you "want to be" when you grew up?
A diplomat or in the CIA

#BragTag
Announcing the new AI4ALL Open Learning program (learn more below).

Past Accomplishments:
Before joining AI4ALL, I was Managing Director of TechHire at Opportunity@Work, a national initiative launched out of the White House to increase diversity in the tech economy.
I worked with a network of 72 cities, states and rural areas helping underrepresented Americans start tech careers.

What keeps you up at night when you think about AI?
Making sure there is equal access to learning AI skills and being involved in AI.

AI4ALL is working to increase diversity and inclusion in artificial intelligence. They educate the next generation of diverse AI leaders, build AI awareness, and expand on and promote beneficial AI. Learn more about their summer AI camps for high school students from underrepresented groups: http://ai-4-all.org/education/

AI4ALL Open Learning program AI is everywhere. Whether or not you want to be a computer scientist, you need to be AI literate. The AI4ALL Open Learning program is a free, accessible, online AI curriculum meant for understanding how AI works in your daily life or for sparking your technical journey. The program will launch in early 2019. Sign up now to be notified when it launches: http://ai-4-all.org/open.

AI ETHICS AND ACCOUNTABILITY: EXPLORING THE RESPONSIBILITY OF GOVERNMENTS, COMPANIES AND THE PUBLIC

PANEL, TUESDAY, 2:30–3:15PM
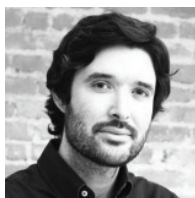
MATT CAGLE
TECHNOLOGY & CIVIL LIBERTIES ATTORNEY AT THE ACLU OF NORTHERN CALIFORNIA

Connect: www.aclunc.org
Twitter: @matt_cagle

I work on our policy and legal team that focuses on technology issues, which include privacy, free speech, and surveillance.

When you were in middle school, what did you "want to be" when you grew up?
An astronaut :)

What book or movie can you read or watch over and over?
2001: A Space Odyssey

#BragTag
I am lucky to work at the American Civil Liberties Union, an organization that has been standing up for our rights for nearly 100 years!

Past Accomplishments:
I uncovered Amazon's sale of a facial recognition technology to law enforcement agencies in the United States, leading a coalition of nearly 70 organizations that demanded that it stop selling the technology to governments. This resulted in actions by members of Congress, shareholders, and Amazon employees.

What experiences make it possible for you to do your work in the AI space?
My legal training and being a nerd :)

What do you think is the biggest challenge of AI currently or in the future?
Ensuring that communities of all backgrounds are in control of AI and not the other way around.

AI ETHICS AND ACCOUNTABILITY: EXPLORING THE RESPONSIBILITY OF GOVERNMENTS, COMPANIES AND THE PUBLIC

PANEL, TUESDAY, 2:30–3:15PM

MARGOT GERRITSEN

PROFESSOR AT STANFORD UNIVERSITY AND DIRECTOR OF THE INSTITUTE FOR COMPUTATIONAL & MATHEMATICAL ENGINEERING AT STANFORD FROM 2010-2018

Connect: margot.stanford.edu
Twitter: @margootjeg

I design and implement educational and research programs, guiding and enabling students.

When you were in middle school, what did you "want to be" when you grew up?
An ornithologist! I really love birds. Instead of that, I learned math and physics so I could understand flight and other fluid dynamics applications that intrigued me.

What book or movie can you read or watch over and over?
The Lord of the Rings, by J. R. R. Tolkien. Thanks to my son, I've seen *Finding Nemo* around 50 times. I also really like the *Big Lebowski.*

#BragTag
I'm a mom, sister, daughter and partner.

**What keeps you up at night when you think about AI?**
I'm concerned about equity in education. All of you (and I!) are very privileged: you are free to learn and are supported in your learning. You will be able to understand AI and other technological advances and use them to enhance your life and improve your health and happiness. Others are not so fortunate.

Most excited for AI to take over...? In what part of your life are you most excited for AI to help?
There are some big challenges out there: equity, education, health, environment, food and water, to name just six. I hope that AI will help us find solutions faster. As for one silly personal wish: it would be pretty nice to have a portable and easy to use communication system that allows you to talk with anyone in any language in real time.

AI ETHICS AND ACCOUNTABILITY: EXPLORING THE RESPONSIBILITY OF GOVERNMENTS, COMPANIES AND THE PUBLIC

PANEL, TUESDAY, 2:30–3:15PM
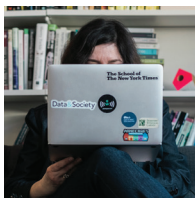
NATASHA SINGER
REPORTER AT THE NEW YORK TIMES

Connect: www.nytimes.com/2018/02/21/technology/personal-tech/limiting-influence-tech.html
Twitter: @natashanyt

I research and write about the intersection of technology, business and society with a particular focus on education technology, digital health and data privacy.

When you were in middle school, what did you "want to be" when you grew up?
I always wanted to be a writer, but I didn't think I was good enough. In college, I was lucky to meet an alumna who was a reporter at *The Boston Globe*, and she suggested I write for my college newspaper.

#BragTag
I developed and teach a course for high school students at The School of The New York Times, the newspaper's summer program, on how to be an ethical innovator.

Past Accomplishments:
My reporting helped prompt the California legislature to pass an education privacy law called the Student Online Personal Information Protection Act. Enacted in 2014, the law prohibits ed tech companies from selling students' data and from amassing profiles of students for non-educational purposes.

What keeps you up at night when you think about AI?
Earlier this year, I interviewed Joi Ito, the director of the Media Lab at MIT, who is teaching an AI ethics and policy course at MIT. He said that we are spending so much time grappling with issues like biased data sets and biased algorithms that we, as a society, often overlook bigger questions such as: Should machines be judging humans? What decisions are so crucial, or risky, that AI should not be involved in the process at all?

Photo credit: Jeenah Moon

GALLERY EXHIBIT
QUESTIONS TO CONSIDER

Artificial intelligence is taking over the world. The world's most powerful companies are funneling billions of dollars into developing new applications for artificial intelligence, and the effects of these investments are already being felt in our everyday lives – in how we get to work, socialize with our friends, take care of our homes and more. However, developments in AI have not all been positive. Stories about machine learning algorithms developing their own creepy language, or about AI's turning into super intelligent killer robots regularly appear in our news feeds. So which is it? Is AI going to enrich humanity? Or is it going to end up destroying the world?

Purin Phanichphant

What are the specific technologies being used in *Face2Face?* Who decides what information is being shown and where it is coming from?

Anastasia Victor

THE ART IN ARTIFICIAL INTELLIGENCE

PANEL, TUESDAY, 2:30–3:15PM
GALLERY OPENING, TUESDAY, 5:00–7:00PM

PURIN PHANICHPHANT
ARTIST AT MINNESOTA STREET PROJECT

Connect: purin.co
IG: @purin.co

My artworks can be described in many ways; however, what ties my work together is the relationship to creating things that are more simple, more playful, and more interactive. My practice employs various elements of design and computer interaction in order to engage the viewer. In my artistic practice, I've been intrigued by the similarities between humans and machines, and the need for the two to collaborate, rather than compete.

When you were in middle school, what did you "want to be" when you grew up?
A diplomat

What book or movie can you read/watch over and over?
500 Days of Summer

#BragTag
I played Mel Gibson's son in a movie called *Air America*.

Past Accomplishments:
Prior to becoming an artist, I worked as a principal product designer at IDEO San Francisco. I have taught design courses at Stanford University, General Assembly, and am currently teaching at UC Berkeley.

What do you think is the most promising application of AI currently or in the future?
Solving ultra-complex problems, such as climate change, social inequalities, and health-related issues.

What do you think is the biggest challenge of AI currently or in the future?
To get AI to think creatively and out of the box.

THE ART IN ARTIFICIAL INTELLIGENCE

PANEL, TUESDAY, 2:30–3:15PM
GALLERY OPENING, TUESDAY, 5:00–7:00PM

ANASTASIA VICTOR
RESIDENT AT GRAY AREA / MOZILLA XR STUDIO

Connect: anastasia.io
Twitter: @AVmakesthings

I create installation and graphic art to explore my interests in the social impacts of emerging tech; for example, how new technologies like augmented reality will affect the way we interact with each other. I view my art as a research practice, which allows me to ask these types of questions through the medium of augmented/virtual reality (XR), generative design, physical installation, and human-computer interaction.

When you were in middle school, what did you "want to be" when you grew up?
A dentist. My dentist told me that dentists weren't allowed to have tattoos (this is NOT true) so I got into architecture instead.

What book or movie can you read or watch over and over?
Player of Games, by Iain M. Banks, and the movie, *The Man Who Fell to Earth*

#BragTag
I was a design lead on the 2017 Temple at Burning Man, which is a huge installation (80 feet high) intended as a memorial for people experiencing loss and grief. I think it's the artwork that I'm most proud of co-creating.

Past Accomplishments:
I just founded a design think tank called Place, which explores the social and spatial implications of augmented reality and AI.

What do you think is the biggest challenge of AI currently or in the future?
Eliminating explicit and implicit bias is a huge challenge. Also determining oversight of the tools being created - who makes the rules and what values do they embed?

What keeps you up at night when you think about AI?
The fact that how AI is built and used will be largely determined by who is in power - both in a political sense and also based who has the most resources, eg. large corporations.

AI, NEWS, ETHICS AND THE FUTURE OF WORK

TUESDAY, 7:00–8:30PM

VAUGHAN SMITH
EXECUTIVE AT FACEBOOK

When you were in middle school, what did you "want to be" when you grew up?
A mountain guide

What book or movie can you read/watch over and over?
Terminator 2

#BragTag
I've climbed New Zealand's highest mountain seven different ways.

Past Accomplishments:
I've served as the CEO of multiple internet companies.

Areas of study that make it possible for you to do your work in the AI space?
PhD in Electrical Engineering

What do you think is the most promising idea or application of AI currently or in the future?
Enhancing our creativity

What do you think is the biggest challenge of AI currently or in the future?
Getting everyone to be sufficiently optimistic

Most excited for AI to take over…? In what part of your life are you most excited for AI to help?
Utilizing my time more efficiently

How am I going to take advantage of this opportunity?

Vaughan Smith

WEDNESDAY
QUESTIONS TO CONSIDER

Who has the power to shape technology?

Joy Buolamwini

Who reaps the benefits of technological advances?

Joy Buolamwini

Who suffers the harms?

Joy Buolamwini

THE CODED GAZE:
UNMASKING ALGORITHMIC BIAS

WEDNESDAY, 9:15–10:15AM

JOY BUOLAMWINI
FOUNDER OF ALGORITHMIC JUSTICE LEAGUE (AJL)

Connect: www.poetofcode.com
Twitter: @jovialjoy
IG: @joyfulcode

I set the vision, research direction, and artistic explorations for AJL. I also spend substantial time on science communication by sharing research on AI bias with policy makers, technology executives, and journalists.

When you were in middle school, what did you "want to be" when you grew up?
Professional skateboarder

#BragTag
I created the first algorithmic audit as a spoken word poem.

Past Accomplishments:
At Oxford University, I piloted the first Rhodes Scholar year of service to launch an initiative that led to the creation of the First Response App to support sexual assault survivors and supporters of survivors.

What experiences make it possible for you to do your work in the AI space?
I earned a bachelor's degree in computer science (Georgia Tech) and master's degrees in Learning and Technology (Oxford University) and Media, Arts, and Science (MIT). In addition, my experience as CTO for a number of startup companies equipped me with the technical foundation to do AI research.

What keeps you up at night when you think about AI?
Lethal autonomous weapons

COMING BACK TO TALK ABOUT THE FUTURE: AN ALUMN(AI) PANEL

PANEL, WEDNESDAY, 2:15–3:15PM

AYESHA BAJWA '14

MASTER'S STUDENT AT MIT COMPUTER SCIENCE AND AI LAB

When you were in middle school, what did you "want to be" when you grew up?
A scientist or researcher. I was, and still am, interested in biology and the natural world. I ended up studying computer science and a bit of electrical engineering, but I still go back and forth on "what I want to be when I grow up!"

What's your favorite Casti tradition?
Rivalry and Banquet! And all the senior year traditions, really.

What do you think is the biggest challenge of AI currently or in the future?
The democratization of information and technology is key to countering inequality. It's not just that AI could lead to the spread of misinformation or falsified information, it's also that, by default, relatively few people profit from new technologies.

What do you think is the most promising idea or application of AI currently or in the future?
Engineers talk about signal and noise. Signal is the meaningful information, while noise is random and doesn't contain useful information. Modern AI (especially deep learning) is promising because it can extract tiny signals from a lot of noise, given sufficiently large datasets. Healthcare and medicine are promising domains for AI to do good.

What experiences make it possible for you to do your work in the AI space?
To build AI, you should know programming and math (calculus, optimization, etc). To evaluate or reason about AI in society, you should have applied domain/policy knowledge, but you'll still need some math to understand how AI systems work. Communication skills are universally important!

> How is AI relevant to you even if you're not planning to study it? Why should you still care about it, and how might it affect you in the future?
>
> Ayesha Bajwa '14

COMING BACK TO TALK ABOUT THE FUTURE: AN ALUMN(AI) PANEL

PANEL, WEDNESDAY, 2:15–3:15PM

VICTORIA DEAN '13
PHD STUDENT IN ROBOTICS AT CARNEGIE MELLON UNIVERSITY

Connect: *vdean.github.io*

What's your favorite Casti tradition?
Spirit week - I was spirit week princess my senior year!

What's your favorite Casti meal?
Chili and cornbread

#BragTag
I founded Code for Good, an MIT student group that brings together students and local nonprofits to work on technical projects.

What experiences make it possible for you to do your work in the AI space?
I did undergraduate research in a computer vision lab at MIT. I learned not only about computer vision, but also about how to conduct research. This experience led me to apply to graduate school.

Most excited for AI to take over…? In what part of your life are you most excited for AI to help?
AI will enable home robots! I'm excited to see robots helping humans with everyday tasks, especially in elderly care.

> Consider a world issue that you're passionate about. How will machine learning play a role in the solution?
>
> Victoria Dean '13

COMING BACK TO TALK ABOUT THE FUTURE: AN ALUMN(AI) PANEL

PANEL, WEDNESDAY, 2:15–3:15PM

KATHLEEN KENEALY '15

UNDERGRADUATE AND MASTER'S STUDENT AT STANFORD UNIVERSITY (B.S. 2019, M.S. 2020), MAJOR: COMPUTER SCIENCE (SPECIALIZATION: ARTIFICIAL INTELLIGENCE), MINOR: THEATRE AND PERFORMANCE STUDIES

Connect: www.linkedin.com/in/kathleen-kenealy/

When you were in middle school, what did you "want to be" when you grew up?
A Broadway actress!

What book or movie can you read or watch over and over?
Apollo 13

What's your favorite Casti tradition?
So many! The Opening Ceremony will always be a particular favorite.

#BragTag
While working at Twitter, I built a machine learning algorithm to identify high-quality videos on Periscope, which increased user engagement and retention by 8%!

What experiences make it possible for you to do your work in the AI space?
I think that all of my (widely varied) studies have benefitted my work in AI. From being an ex-math major to minoring in theatre to studying empathy and psychology, all of my passions are combined in AI. It is truly an interdisciplinary field!

What keeps you up at night when you think about AI?
How can we ensure that AI is used responsibly and for the good of ALL? How do we build AI products that fulfill these goals?

How does AI currently affect your life and how can it do better?

Kathleen Kenealy '15

COMING BACK TO TALK ABOUT THE FUTURE: AN ALUMN(AI) PANEL

PANEL, WEDNESDAY, 2:15–3:15PM

SHIVANI NISHAR '16
UNDERGRADUATE STUDENT AT BROWN UNIVERSITY,
MAJOR: COGNITIVE SCIENCE

Connect: www.linkedin.com/in/shivaninishar/

When you were in middle school, what did you "want to be" when you grew up?
Pro-bono pediatrician

What book or movie can you read/watch over and over?
Jurassic Park Trilogy

What's your favorite Casti meal?
Pasta shapes!

What's was your secret study spot on campus?
A few of my friends and I used to sneak up to the little area outside of the attic in the Admin building where Mary Lockey's ghost supposedly lives!

#BragTag
I am a mentally ill woman of color fighting for justice, education, and advocacy in other mentally ill POC communities. It feels good to use my identity and lived experiences in a field that has historically been homogenous in order to introduce revolutionary and culturally competent ideas to better aid and support vulnerable populations in ways that actually resonate.

What do you think is the biggest challenge of AI currently or in the future?
Mental illnesses are dynamic as they are fluid; there is no one constant state, and it's illogical to boil them down to symptoms. AI would need to factor in sociocultural contexts to aid humans with their mental health and must be flexible in altering forms of therapy and communication to best fit each client's need.

> **What is the balance between AI and humans in serving vulnerable populations? (Answer: you need both!)**
>
> Shivani Nishar '16

THURSDAY
QUESTIONS TO CONSIDER

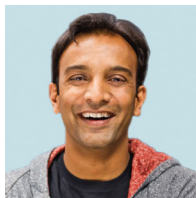How do you make a technology that benefits *EVERYONE*?

DJ Patil

A living cell is like a robot, and we are made of trillions of cells and not much else. So how does intelligence and consciousness arise in us? And if it were to arise in robots, how similar or different would it be?

Baba Brinkman

WHAT MAKES A TECHNOLOGY RADICAL AND REVOLUTIONARY

THURSDAY, 1:00–1:45PM

DJ PATIL

FORMER U.S. CHIEF DATA SCIENTIST

Connect: en.wikipedia.org/wiki/DJ_Patil
Twitter: @dpatil

In this role, I worked to responsibly unleash the power of data to benefit all Americans.

When you were in middle school, what did you "want to be" when you grew up?
A teacher

What book or movie can you read/watch over and over?
The Survivors by Tom Godwin

#BragTag
I barely graduated from high school because of my math grades, and my PhD is in math.

Past accomplishments:
Co-coined the term data science. Helped improve weather forecasting. Served twice in public service roles.

What do you think is the most promising idea or application of AI currently or in the future?
Drug discovery

What do you think is the biggest challenge of AI currently or in the future?
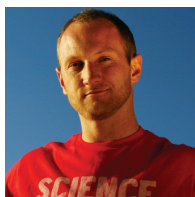Ethics

What keeps you up at night when you think about AI?
Weaponization of AI

Most excited for AI to take over...? In what part of your life are you most excited for AI to help?
Self-driving car

RAP GUIDE TO CONSCIOUSNESS (HUMAN AND MACHINE)

THURSDAY, 2:00–3:15PM

BABA BRINKMAN
RAPPER AND SCIENCE COMMUNICATOR

Connect: bababrinkman.com
Twitter: @bababrinkman

I'm transforming humanity's scientific knowledge into music and lyrics to advance our understanding and appreciation of where we came from and where we are going.

When you were in middle school, what did you "want to be" when you grew up?
A writer

What book or movie can you read/watch over and over?
Game of Thrones

#BragTag
Before I was a rapper, I was a tree planter as a summer job in high school and college, and I personally planted more than one million trees over the course of ten years in Western Canada.

Past Accomplishments:
I have performed live on MSNBC's *The Rachel Maddow Show*, have shared stages with Stephen Hawking and Neil deGrasse Tyson, and have won several awards for innovative theatre and science communication. Bill Nye the Science Guy made his rap debut on one of my songs. My mission is to build bridges between the worlds of science and popular culture.

What do you think is the biggest challenge of AI currently or in the future?
Improvisation. Most of today's AI is very domain specific, only able to perform the task it was trained on. To really qualify as intelligence, it needs to become domain general, but that's a huge leap from where we are now.

Most excited for AI to take over…? In what part of your life are you most excited for AI to help?
Driving. I would much rather read a book or watch a movie while traveling from A to B. Plus, people are terrible drivers. I can't wait for self-driving cars to take over.

CAST(AI) GLOSSARY

To get us all up to speed with the lexicon of artificial intelligence, we've compiled a list of terms. Please note that this list is not comprehensive. For links and additional resources, please visit: WWW.CASTILLEJA.ORG/GW19SUPPLEMENT

ALGORITHM
A code or set of instructions to be followed to problem-solve, especially by a computer.

ALGORITHMIC BIAS
The human prejudices in favor of or against one thing, person, or group compared with another, usually in a way considered to be unfair, that intentionally or unintentionally inform how code is written or what data sets are used to train algorithms.

ARTIFICIAL INTELLIGENCE (also referred to by its acronym AI)
The theory and development of algorithms to perform tasks that normally require a level of human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages. AI is a broad field that includes different algorithms such as pattern-finding to automatic translation, anomaly detection, recognition tasks, and decision- making.

BIG DATA
Large collections of data (information), which are perceived as "big" because they are so large that they pose challenges to their manipulation and analysis because they are limited by the available software and hardware.

CHATBOT
A computer program, which uses AI, that simulates a conversation with a human user through text and/or voice.

DEEP LEARNING
A sophisticated subset of *machine learning* with *neural networks* (like the human brain) that derives meaning from and makes decisions across interconnected and heterogeneous datasets. The *algorithms* used in deep learning are complex since they are identifying hard to find patterns.

ETHICS
A system of moral principles, affecting how people make decisions and lead their lives. Ethicists debate what is good for individuals and society.

CAST(AI) GLOSSARY

IMAGE RECOGNITION / FACIAL RECOGNITION
Algorithms that are designed to analyze images and identify features and characteristics; for example, by analyzing an image of an object or human face for certain features.

INTERSECTIONALITY
"Intersectionality is a lens through which you can see where power comes [from and how it] collides; where it interlocks and intersects," according to Kimberle Crenshaw. Often, it is used to describe the way in which an individual exists at the center of the intersections of his/her/their identity.

MACHINE LEARNING
Often used interchangeably with *AI*, this is the process by which a program can use the data it collects to look for patterns, and then apply those patterns in new situations. Machine learning models (including *neural networks* and *deep learning*) try to mimic human decision-making ability based on analyzing complex information. Depending on the complexity of the data and the model, different approaches can be used such as *neural networks* or *deep learning*.

NATURAL LANGUAGE PROCESSING (also referred to by its acronym NLP)
The automatic interpretation and generation of human languages, for example, computer programming that enables users to interact with the computer using informal speech.

NEURAL NETWORKS
Algorithms that encode complex behaviors or that try to understand patterns similar to human brain functioning.

WORDS TO LOOK UP LATER
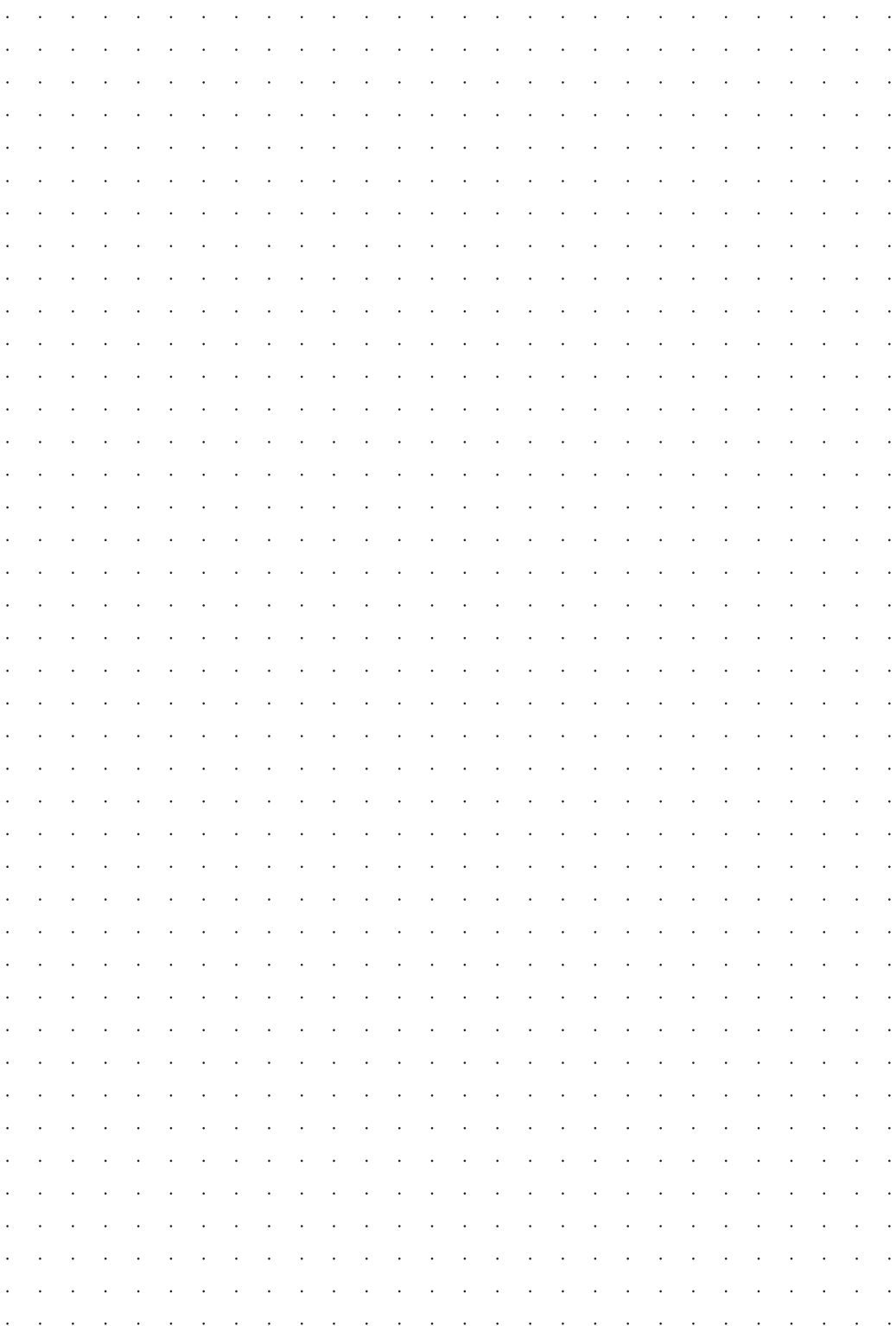
NOW WHAT? What ideas* do I have to engage proactively with AI?

Small ideas are encouraged, and big ideas are equally welcome! Remember, small daily actions can effect big change over time.

Global Week 2019

THE PROMISES AND CHALLENGES OF ARTIFICIAL INTELLIGENCE

ABOUT GLOBAL WEEK. Each January, Castilleja School hosts Global Week to provide students with a unique opportunity to examine a globally relevant topic through workshops, projects, and in-depth engagement with speakers.

Global Week offers Castilleja a chance to deepen our **awareness** of an important global issue. We foster **compassion** and develop an understanding of how to **engage** with the issue to effect change in the world. We use the week to think about and practice our leadership competencies: initiative, agility, and purpose.

To learn more, please visit http://castilleja.org/globalweek

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